

REMARKS

Favorable reconsideration of this application as presently amended is respectfully requested. Claims 1-10 and 12-22 are pending. Claims 19 and 20 are amended and claims 21-22 are added.

The Examiner is thanked for indicating that claims 4 and 5 would be allowable if rewritten in independent format including all of the limitations of the base claim and any intervening claims, in order to overcome the objection of their being dependant upon a rejected base claim. Claims 21-22 have been added accordingly, without the features added to claim 1 by the previous amendment to claim 1, as claims 4 and 5 were also only objected to in the February 1, 2002, Office Action, prior to the previous amendment being filed.

The Examiner is thanked for the courtesies extended to Applicant's representative during an August 28, 2002, telephonic interview in which the outstanding rejections were discussed. Applicant's separate record of the substance of that interview is contained in the following remarks.

Claims 1, 2, 6, 10 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,461,676, to Hobelsberger, in view of U.S. Patent No. 5,771,304 to Van Den Thillart *et al.* (herein, "Thillart"), and further in view of U.S. Patent No. 5,257,316 to Takeyama *et al.* This rejection is respectfully traversed.

Claim 1 recites an audio system, comprising: a cabinet having an opening in a first wall thereof; a first speaker for emitting audio output, said first speaker being mounted inversely at said opening of said cabinet; and a passive radiator for emitting audio output, said passive radiator mounted in said cabinet opposite said first speaker; and a sensor for sensing pressure caused by the audio output from said first speaker, said sensor being mounted in said cabinet by a sensor mounting structure joined to said cabinet, said sensor mounted in such a manner as to receive a signal from both

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the speaker and the passive radiator.

Hobelsberger is cited for disclosing a bass reproduction loudspeaker system in an enclosed housing comprising a sound radiating speaker, constituting a passive radiator, and a sound transducer, which reads on a first speaker and with a sensor disposed therein between. However, Hobelsberger in fact does not teach or suggest a passive radiator.

Although there is no indication in the Office Action as to the identity of the elements of Hobelsberger that correspond to the cited elements in the Office Action, during the August 28, 2002, telephonic interview, the Examiner clarified the rejection by indicating that the sound radiating speaker (8) of Hobelsberger corresponds to the passive radiator of claim 1 and the transducer (9) of Hobelsberger corresponds to the first speaker of claim 1. Applicant respectfully disagrees.

Neither the sound radiating speaker (8) nor the transducer (9) of Hobelsberger is a passive radiator. A passive radiator is an unpowered element that relies on the sound pressure developed in the speaker enclosure for its operation. As discussed in Hobelsberger, speaker (8) and transducer (9) are driven components. In addition, transducer (9) does not radiate as it is entirely contained within the sealed enclosure. Transducer (9) of Hobelsberger is merely used to control the volume of the enclosure. Thus, no element of Hobelsberger teaches or suggests a passive radiator as recited in claim 1. Furthermore, Thillart and Takeyama fail to overcome the deficiencies of Hobelsberger. Therefore, claim 1 is patentable over the combination of Hobelsberger, Thillart and Takeyama, and claim 1 is thus allowable.

Claims 2, 6, 10 and 13 depend directly or indirectly from claim 1, and, accordingly, include all of the patentable features of claim 1 as well as other patentable features. Therefore, claims 2, 6, 10 and 13 are patentable over Hobelsberger, Thillart and Takeyama for at least the reasons discussed above with respect to claim 1. Thus, Applicant respectfully requests reconsideration and

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withdrawal of the rejection.

In addition, the vague and incomplete rejection of claims 1, 2, 6, 10 and 13 indicate that the combination of Hobelsberger, Thillart and Takeyama is *prima facie* improper. As stated by the Federal Circuit in *Sibia Neurosciences Inc. v. Cadus Pharmaceutical Corp.* 55 USPQ2d 1927, 1931 (Fed. Cir. 2000), “the factual underpinnings of obviousness include whether a reference provides a motivation to combine its teachings with another,” citing *Tec Air, Inc. v. Denso Mfg.*, 52 USPQ2d 1296, 1298 (Fed. Cir. 1999). Furthermore, as noted recently by the Federal Circuit in *In re Lee*, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002), specific reasons must be shown in the art suggesting a combination of references, see, also *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (“particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed”); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) (“even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination.”). Because the Office Action cites no portion of any of the references that would supply a person of ordinary skill in the art with a motivation to combine the teachings of Hobelsberger, Thillart and Takeyama, the combination of Hobelsberger, Thillart and Takeyama is *prima facie* improper.

In addition, there is no reason why a person of ordinary skill in the art would combine Hobelsberger, Thillart and Takeyama, unless the person of ordinary skill in the art had access to Applicant’s application. There is no suggestion in Hobelsberger, Thillart or Takeyama that would lead a person of ordinary skill in the art to modify the teachings of the other references. As held in *In Re Lee*, “It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to “[use] that which the inventor taught against its teacher.” *W.L. Gore v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983),” see 61 USPQ2d at 1434. Because there is no portion of Hobelsberger, Thillart or

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Takeyama that would supply a person of ordinary skill in the art with a motivation to combine their teachings, the combination of Hobelsberger, Thillart and Takeyama is improper.

For the above reasons, the teachings of Hobelsberger, Thillart and Takeyama may not be properly combined and thus the rejection of claims 1, 2, 6, 10 and 13 based on the combination of Hobelsberger, Thillart and Takeyama should be withdrawn. Therefore, claims 1, 2, 6, 10 and 13 are patentable over the improper combination of Hobelsberger, Thillart and Takeyama.

In addition, with respect to claims 1, 2, 6, 10 and 13, these claims have been rejected on the basis of facts within the personal knowledge of the Examiner. The Examiner has indicated that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Hobelsberger with the teachings of Thillart and Takeyama, but has cited no portion of any of the references that states that such a substitution may or should be made. Accordingly, under 37 C.F.R. § 1.104(d)(2), Applicant hereby requests that the Examiner provide an affidavit supporting the Examiner's assertion used as a basis for this rejection.

Claim 12 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,461,676, to Hobelsberger, in view of U.S. Patent No. 5,771,304 to Van Den Thillart *et al.* (herein, "Thillart"), further in view of U.S. Patent No. 5,257,316 to Takeyama *et al.* and further in view of U.S. Patent No. 5,693,917 to Bertagni *et al.* This rejection is respectfully traversed.

Claim 12 depends directly from claim 1, and, accordingly, includes all of the patentable features of claim 1 as well as other patentable features. Therefore, claim 12 is patentable over Hobelsberger, Thillart and Takeyama for at least the reasons discussed above with respect to claim 1. Furthermore, with respect to claim 12, Bertagni fails to overcome the deficiencies of Hobelsberger, Thillart and Takeyama. Thus, claim 12 is patentable over the combination of Hobelsberger, Thillart,

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Takeyama and Bertagni.

In addition, the vague and incomplete rejection of claim 12 indicates that the combination of Hobelsberger, Thillart, Takeyama and Bertagni is *prima facie* improper. As stated by the Federal Circuit in *Sibia Neurosciences Inc. v. Cadus Pharmaceutical Corp.* 55 USPQ2d 1927, 1931 (Fed. Cir. 2000), “the factual underpinnings of obviousness include whether a reference provides a motivation to combine its teachings with another,” citing *Tec Air, Inc. v. Denso Mfg.*, 52 USPQ2d 1296, 1298 (Fed. Cir. 1999). Furthermore, as noted recently by the Federal Circuit in *In re Lee*, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002), specific reasons must be shown in the art suggesting a combination of references, see, also *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (“particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed”); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) (“even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination.”). Because the Office Action cites no portion of any of the references that would supply a person of ordinary skill in the art with a motivation to combine the teachings of Hobelsberger, Thillart and Takeyama with that of Bertagni, the combination of Hobelsberger, Thillart, Takeyama and Bertagni is *prima facie* improper.

In addition, there is no reason why a person of ordinary skill in the art would combine Hobelsberger, Thillart, Takeyama and Bertagni, unless the person of ordinary skill in the art had access to Applicant’s application. There is no suggestion in Hobelsberger, Thillart, Takeyama or Bertagni that would lead a person of ordinary skill in the art to modify the teachings of the other references. As held in *In Re Lee*, “It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to “[use] that which the inventor taught against its teacher.” *W.L. Gore v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983),” see 61 USPQ2d at 1434. Because there is no portion of

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Hobelsberger, Thillart, Takeyama or Bertagni that would supply a person of ordinary skill in the art with a motivation to combine their teachings, the combination of Hobelsberger, Thillart, Takeyama and Bertagni is improper.

For the above reasons, the teachings of Hobelsberger, Thillart, Takeyama and Bertagni may not be properly combined and thus the rejection of claim 12 based on the combination of Hobelsberger, Thillart, Takeyama and Bertagni should be withdrawn. Therefore, claim 12 is patentable over the improper combination of Hobelsberger, Thillart, Takeyama and Bertagni.

In addition, with respect to claim 12, this claim has been rejected on the basis of facts within the personal knowledge of the Examiner. The Examiner has indicated that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Hobelsberger, Thillart and Takeyama with the teachings of Bertagni, but has cited no portion of any of the references that states that such a substitution may or should be made. Accordingly, under 37 C.F.R. § 1.104(d)(2), Applicant hereby requests that the Examiner provide an affidavit supporting the Examiner's assertion used as a basis for this rejection.

With respect to claim 14, claim 14 as amended claims a method for improving acoustical accuracy in an audio system comprising the steps of mounting a first speaker inversely in an opening of a wall of a cabinet; mounting a passive radiator in said cabinet opposite said first speaker; sensing pressure from audio output from the first speaker and the passive radiator; and adjusting the audio output from the first speaker based on the pressure sensed in said sensing step. Since, as the Examiner set forth, claim 14 discloses a method that corresponds substantially to the elements of the system of claim 1, claim 14 is patentable for at least the same reasons set forth above for claim 1. Thus, Applicant respectfully requests reconsideration and withdrawal of the rejection.

Claims 15-20 depend directly or indirectly from claim 14, and, accordingly,

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include all of the patentable features of claim 14 as well as other patentable features. Therefore, claims 15-20 are patentable for the reasons discussed above with respect to claim 14. Thus, Applicant respectfully requests reconsideration and withdrawal of the rejection.

Claims 3, 8-9 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,461,676, to Hobelsberger, in view of U.S. Patent No. 5,771,304 to Van Den Thillart *et al.* (herein, "Thillart"), in view of U.S. Patent No. 5,257,316 to Takeyama *et al.* and further in view of U.S. Patent No. 5,588,065 to Tanaka *et al.* This rejection is respectfully traversed.

Claims 3, 8-9 and 17-18 depend directly or indirectly from either claim 1 or claim 14, and, accordingly, include all of the patentable features of claims 1 or 14 as well as other patentable features. Therefore, claims 3, 8-9 and 17-18 are patentable over the combination of Hobelsberger, Thillart, Takeyama and Tanaka for at least the reasons discussed above with respect to claims 1 and 14. Thus, Applicant respectfully requests reconsideration and withdrawal of the rejection.

In addition, the vague and incomplete rejection of claims 3, 8-9 and 17-18 indicate that the combination of Hobelsberger, Thillart, Takeyama and Tanaka is *prima facie* improper. As stated by the Federal Circuit in *Sibia Neurosciences Inc. v. Cadus Pharmaceutical Corp.* 55 USPQ2d 1927, 1931 (Fed. Cir. 2000), "the factual underpinnings of obviousness include whether a reference provides a motivation to combine its teachings with another," citing *Tec Air, Inc. v. Denso Mfg.*, 52 USPQ2d 1296, 1298 (Fed. Cir. 1999). Furthermore, as noted recently by the Federal Circuit in *In re Lee*, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002), specific reasons must be shown in the art suggesting a combination of references, see, also *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed"); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) ("even when

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the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination.”). Because the Office Action cites no portion of any of the references that would supply a person of ordinary skill in the art with a motivation to combine the teachings of Hobelsberger, Thillart, Takeyama and Tanaka, the combination of Hobelsberger, Thillart, Takeyama and Tanaka is *prima facie* improper.

In addition, there is no reason why a person of ordinary skill in the art would combine Hobelsberger, Thillart, Takeyama and Tanaka, unless the person of ordinary skill in the art had access to Applicant’s application. There is no suggestion in Hobelsberger, Thillart, Takeyama or Tanaka that would lead a person of ordinary skill in the art to modify the teachings of the other references. As held in *In Re Lee*, “It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to “[use] that which the inventor taught against its teacher.” *W.L. Gore v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983),” see 61 USPQ2d at 1434. Because there is no portion of Hobelsberger, Thillart, Takeyama or Tanaka that would supply a person of ordinary skill in the art with a motivation to combine their teachings, the combination of Hobelsberger, Thillart, Takeyama and Tanaka is improper.

For the above reasons, the teachings of Hobelsberger, Thillart, Takeyama and Tanaka may not be properly combined and thus the rejection of claims 3, 8-9 and 17-18 based on the combination of Hobelsberger, Thillart, Takeyama and Tanaka should be withdrawn. Therefore, claims 3, 8-9 and 17-18 are patentable over the improper combination of Hobelsberger, Thillart, Takeyama and Tanaka.

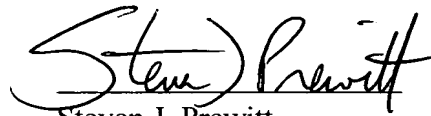
In addition, with respect to claims 3, 8-9 and 17-18, these claims have been rejected on the basis of facts within the personal knowledge of the Examiner. The Examiner has indicated that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Hobelsberger, Thillart, and Takeyama with the teachings of Tanaka, but has cited no portion of any of the

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references that states that such a substitution may or should be made. Accordingly, under 37 C.F.R. § 1.104(d)(2), Applicant hereby requests that the Examiner provide an affidavit supporting the Examiner's assertion used as a basis for this rejection.

If the Examiner has any questions or concerns regarding the present response, the Examiner is invited to contact Steven J. Prewitt at 703-591-2664. In view of the foregoing, it is respectfully submitted that this application is in condition for allowance, and favorable action is respectfully solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Steven J. Prewitt", written over a horizontal line.

Steven J. Prewitt
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August 30, 2002



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)	
)	
MULLINS, Joe H.)	Examiner: GRIER, Laura A.
)	
Serial Number: 09/389,085)	Art Unit: 2644
)	
Filed: September 2, 1999)	
)	
For: LOW FREQUENCY FEEDBACK)	Docket No.: UNME-0019-1
CONTROLLED AUDIO SYSTEM)	

Director of the U.S. Patent and Trademark Office
Washington, D.C. 20231

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Sir:

Below are the amendments in the accompanying Amendment for the above-identified application shown in redlined format:

IN THE CLAIMS

Please amend the claims, without prejudice or disclaimer, as indicated below:

1. An audio system, comprising:
 - a cabinet having an opening in a first wall thereof;
 - a first speaker for emitting audio output, said first speaker being mounted inversely at said opening of said cabinet;
 - a passive radiator for emitting audio output, said passive radiator mounted in said cabinet opposite said first speaker; and
 - a sensor for sensing pressure caused by the audio output from said first speaker, said sensor being mounted in said cabinet by a sensor mounting structure joined to said cabinet, said sensor mounted in such a manner as to receive a signal from both the speaker and the passive radiator.

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2. The audio system of claim 1, wherein said audio system comprises a low frequency audio system.
3. The audio system of claim 1, wherein said sensor comprises a second speaker.
4. The audio system of claim 1, wherein said sensor mounting structure comprises a damped elastic mounting structure.
5. The audio system of claim 1, wherein said sensor mounting structure comprises an enclosure mounted on said first wall and including said opening in said first wall.
6. The audio system of claim 1, further comprising a means for adjusting the audio output of said first speaker based on said pressure sensed by said sensor.
7. The audio system of claim 1, wherein said first speaker has a speaker maximum width and said sensor has a sensor maximum width, and said sensor maximum width is smaller than said speaker maximum width.
8. The audio system of claim 1, wherein said sensor has a signal-to-noise ratio of at least of 100 dB.
9. The audio system of claim 1, wherein said audio system has a feedback factor of 30 to 50 dB when said first speaker operates at a frequency of about 15 to 300 Hz.
10. The audio system of claim 1, further comprising acoustic absorbing material contained in said cabinet.
12. The audio system of claim 1, wherein said first speaker comprises an electrodynamic planar speaker.

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13. The audio system of claim 1, wherein said first speaker comprises an electrostatic planar speaker.

14. A method for improving acoustical accuracy in an audio system comprising the steps of:

mounting a first speaker inversely in an opening of a wall of a cabinet;

mounting a passive radiator in said cabinet opposite said first speaker;

sensing pressure from audio output from the first speaker and the passive radiator; and

adjusting the audio output from the first speaker based on the pressure sensed in said sensing step.

15. The method of claim 14, wherein the audio system comprises a low frequency audio system.

16. The method of claim 14, wherein the sensor comprises a second speaker.

17. The method of claim 14, wherein said sensing step is performed by a sensor having a signal-to-noise ratio of at least of 100 dB.

18. The method of claim 14, wherein said method produces an audio system feedback factor of 30 to 50 dB when the first speaker operates at a frequency of about 15 to 300 Hz.

19. ~~(Amended) The audio system method~~ of claim 14, wherein said first speaker comprises an electrodynamic planar speaker.

20. ~~(Amended) The audio system method~~ of claim 14, wherein said first speaker comprises an electrostatic planar speaker.

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Please add the following new claims:

21. (New) An audio system, comprising:
 - a cabinet having an opening in a first wall thereof;
 - a first speaker for emitting audio output, said first speaker being mounted inversely at said opening of said cabinet; and
 - a sensor for sensing pressure caused by the audio output from said first speaker, said sensor being mounted in said cabinet by a sensor mounting structure joined to said cabinet, wherein said sensor mounting structure comprises a damped elastic mounting structure.

22. (New) An audio system, comprising:
 - a cabinet having an opening in a first wall thereof;
 - a first speaker for emitting audio output, said first speaker being mounted inversely at said opening of said cabinet; and
 - a sensor for sensing pressure caused by the audio output from said first speaker, said sensor being mounted in said cabinet by a sensor mounting structure joined to said cabinet, wherein said sensor mounting structure comprises an enclosure mounted on said first wall and including said opening in said first wall.